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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,976	02/15/2002	Xiangxin Bi	2950.18US02	1411

7590 12/03/2003

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EXAMINER

LE, HOA T

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 12/03/2003

160

Please find below and/or attached an Office communication concerning this application or proceeding.

210 16

Office Action Summary

Application No.

10/076,976

Applicant(s)

BI ET AL

Examiner

H. T. Le

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Claims 18-21, 23-28 and 30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As stated in the previous office actions, although there is support for 100 nm and 500 nm as the upper particle size limits of the claimed particles, there is no support for 150 nm, 125 nm or 25 nm.

Applicants argued that a support for 500 nm or 100 nm or 50 nm as the upper average particle size limits of the claimed collection of particles should sufficiently provide upper particle size limits of 25 nm, 125 nm and 150 nm citing In re Wertheim, in which the CCPA held that a disclosure of a range of 25% to 60% was sufficient support of a claim to a range of 35% to 60%.

Varying different average particle sizes in a collection of particles as in the case at hand is not as simple as arbitrarily choosing the range of solid content in a composition where it involves only weighing the content of the components in the composition. As disclosed throughout the instant specification, the resulting particle size of particles produced by the method disclosed largely depends on several factors: reaction temperature, concentration of the reactants, reactant gas flow rate and velocity, laser power, vapor pressure, etc... A change in maximum particle size requires different operating and reaction

conditions and such conditions have not been disclosed in the original specification. No where in the specification describes the conditions under which upper particle size limits of 25 nm, 125 nm or 150 nm can be achieved. Furthermore, the original specification does not disclose how a collection of particles having a maximum average particle size of 25 nm can be obtained from to a collection of particles having 50 nm as the upper particle size limit. Similarly, the original specification does not disclose how a collection of particles having an upper particle size limit of 125 nm or 150 nm can be obtained from a collection of particles having maximum particle size of 500 nm. For reasons discussed above, a support for 50 nm, 100 nm or 500 nm as the upper particle size limits does not automatically provide support for 25 nm, 125 nm or 150 nm as the upper particle size limits as argued by applicants.

2. Claims 22 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiederhoft et al for reasons set forth in the last office action and further discussed below.

Applicants argued that titanium dioxide particles produced by the method disclosed in the Wiederhoft reference are "aqueous sols and agglomerated masses" citing some European reference as a proof. This is not persuasive. Wiederhoft et al describe their titanium dioxide particles as "monodisperse" and "nanodisperse" particles. This suggests that the particles are not in the form of aqueous sols but rather meet the claimed language of "collection of particles". In addition, applicants argue that the claimed titanium dioxide particles are "un-agglomerated forms" of titanium dioxide while the Wiederhoft patent fails to disclose un-agglomerated titanium dioxide particles. The claimed language "a collection

of particles” does not suggest or require that the particles be “unagglomerated” as contended by applicants. In addition, nowhere in the Wiederhoft patent suggests that their particles are of agglomerated forms.

3. Applicants questioned as to why independent claims are not included in the prior art rejection. Note that with the exception of claims 22 and 29 (which were subject to the art-based rejection), all claims as currently amended are not acceptable because they contain new matter and have been rejected under USC 112 first paragraph. Thus the independent claims are expected to be canceled and the dependent claims (namely 22 and 29) be rewritten in an independent format. Therefore, it has been deemed redundant to further reject claims other than claims 22 and 29 under the art-based rejections.

4. Rejection based on the Basque reference is hereby withdrawn.

Conclusion

5. Applicant's arguments filed September 22, 2003 have been fully considered but they are not persuasive for the reasons set forth above.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee

pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.

In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 703-308-2415. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Friday.



H. T. Le
Primary Examiner
Art Unit 1773